



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,275	09/16/2003	Tien-Tsai Huang	HUAN3212/EM	9830
23364	7590	05/16/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			HUNNINGS, TRAVIS R	
			ART UNIT	PAPER NUMBER
			2632	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,275

Applicant(s)

HUANG, TIEN-TSAI

Examiner

Travis R Hunnings

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because it is not dated.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 4, 9, 10, 12-15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow (US Patent 5,469,135) in view of Lin (US patent 6,259,362).

Regarding claim 1, Solow discloses *Vehicle Security Device And Alarm* that has the following claimed limitations:

The claimed lock unit coupled to the steering wheel is met by the vehicle anti-theft device that is connected to the steering wheel of a vehicle as seen in figure 2;

Art Unit: 2632

The claimed key insertable into the lock unit for releasing the coupling between the lock unit and the steering wheel is met by Solow having the mechanical configuration having a key which is inserted into a lock to lock the device onto a steering wheel as described by Wu, US Patent 5,163,309 which is incorporated by reference (Solow: col. 2, Lines 39-41);

The claimed at least one electronic sensor installed in an electronic module of the lock unit is met by the detector of the vehicle anti-theft device (col. 3, lines 39-41);

The claimed at least one electronic sensor being used to detect vertical and horizontal vibrations of the transportation vehicle, movement of an object inside the transportation vehicle, and to output a signal of detection is met by the detector being operable to include a variety of detectors that respond to vibration, ultrasonic intrusion detection, voltage transients or the like and when the detector is triggered it activates a relay timer to signal an alarm (col. 3, lines 39-48);

The claimed electronic module inputting a signal of setting from a far end is met by the remote transmitter which arms/disarms the vehicle anti-theft device (col. 3, lines 27-35);

The claimed function setting device used to set and output the signal of setting to enable/disable the at least one electronic sensor is met by the remote transmitter which arms/disarms the vehicle anti-theft device (col. 3, lines 27-35);

The claimed power supply unit used to provide the necessary working power to the lock unit and the electronic module is met by the power provided by the vehicle battery through the cigarette lighter socket (col. 3, lines 1-3);

The claimed standby power set used to provide standby power supply is met by the 9-volt battery (col. 3, lines 4-8);

The claimed standby power circuit used to provide the standby power supply to the lock unit and the electronic module if the power supply unit fails is met by the circuitry that connects the batter to the vehicle anti-theft device as shown in figure 4.

However, Solow does not specifically disclose an electronic module that outputs the signal of detection to a far end and a setting device used to input and indicate the signal of detection from the electronic module. Lin discloses *System For Conveying Vehicle Status Information Upon Exit From A Vehicle* that teaches a remote unit and vehicle control unit that is operable to receive a signal of detection from several vehicle sensor systems and send that signal to the remote unit that is able to indicate to the user at a remote location of the current status of the vehicle systems (abstract and col. 2, lines 58-65). Modifying the vehicle anti-theft device of Solow to include a transmitting means in the vehicle device and an indicating means on the remote transmitter to transmit a signal when the detector is triggered to the remote transmitter would allow the user to be more quickly notified of a potential threat to their vehicle. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow according to the teachings of Lin to modify the device to include an electronic module that outputs the signal of detection to a far end and a setting device used to input and indicate the signal of detection from the electronic module.

Regarding claim 3, Solow and Lin disclose all of the claimed limitations. The claimed lock unit being a mechanical lock and is unlocked from the steering wheel upon insertion of the key into the lock unit is met by the mechanical configuration of Solow being disclosed by Wu, as incorporated by reference, as unlocking the lock unit from the steering wheel when the key is placed into the lock (Wu: col. 2, lines 31-53).

Regarding claim 4, Solow and Lin disclose all of the claimed limitations. The claimed electronic module comprising an infrared sensor, a vertical motion sensor and a horizontal motion sensor would have been obvious to one of ordinary skill in the art to use the abovementioned sensors to enable the detectors to detect vehicle vibration or intrusion (Solow: col. 3, lines 39-41).

Regarding claim 9, Solow and Lin disclose all of the claimed limitations. The claimed power supply unit, the electronic module, and the standby power circuit are installed in the lock unit is met by the device including the alarm circuit being mounted within a housing as seen in figures 1-3 (col. 2, lines 54-56).

Regarding claim 10, Solow discloses the following claimed limitations:

The claimed lock unit coupled to the steering wheel is met by the vehicle anti-theft device that is connected to the steering wheel of a vehicle as seen in figure 2;

The claimed key insertable into the lock unit for releasing the coupling between the lock unit and the steering wheel is met by Solow having the mechanical

configuration having a key which is inserted into a lock to lock the device onto a steering wheel as described by Wu, US Patent 5,163,309 which is incorporated by reference (Solow: col. 2, lines 39-41);

The claimed sensor module with at least one sensing function used to detect a static/motion status of the transportation vehicle and to output a signal of detection when the static/motion status of the transportation vehicle has been changed is met by the detector of the vehicle anti-theft device (col. 3, lines 39-41) and by the detector being operable to include a variety of detectors that respond to vibration, ultrasonic intrusion detection, voltage transients or the like and when the detector is triggered it activates a relay timer to signal an alarm (col. 3, lines 39-48);

The claimed power supply unit used to provide the necessary working power to the lock unit and the electronic module is met by the power provided by the vehicle battery through the cigarette lighter socket (col. 3, lines 1-3);

The claimed standby power set used to provide standby power supply is met by the 9-volt battery (col. 3, lines 4-8);

The claimed standby power circuit used to provide the standby power supply to the lock unit and the electronic module if the power supply unit fails is met by the circuitry that connects the batter to the vehicle anti-theft device as shown in figure 4.

However, Solow does not specifically disclose the claimed at least on tire pressure sensor for detecting a status of the tire pressure of the transportation vehicle and for transmitting a signal of low pressure if the pressure of one tire drops below a predetermined pressure value and an electronic module including the sensor module

Art Unit: 2632

installed in the lock unit for inputting the signal of low pressure to a far end. Lin teaches a vehicle controller that inputs tire pressure values and outputs a signal of low tire pressure to a remote device to indicate to the user that the tire pressure is below a nominal value (col. 2, lines 58-65). Modifying the device of Solow to detect low tire pressure situations and to remotely indicate the low tire pressure situation to the user would give the user more information regarding their vehicle and make it more safe by notifying of dangerous low tire pressure conditions. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow according to the teachings of Lin to include at least one tire pressure sensor for detecting a status of the tire pressure of the transportation vehicle and for transmitting a signal of low pressure if the pressure of one tire drops below a predetermined pressure value and an electronic module including the sensor module installed in the lock unit for inputting the signal of low pressure to a far end.

Solow still does not specifically disclose the claimed setting device for inputting the signal of detection/the signal of low pressure and providing a sound and lighting effect corresponding to the signal of detection/the signal of low pressure. Lin teaches a remote unit and vehicle control unit that is operable to receive a signal of detection from several vehicle sensor systems, including alarm and tire pressure sensors, and send that signal to the remote unit that is able to indicate visually and audibly (Beeper 64 in figure 2) to the user at a remote location of the current status of the vehicle systems (abstract and col. 2, lines 58-65). Modifying the vehicle anti-theft device of Solow to include a transmitting means in the vehicle device and an indicating means on the

Art Unit: 2632

remote transmitter to transmit a signal when the detector is triggered to the remote transmitter would allow the user to be more quickly notified of a potential threat to their vehicle or a dangerous low tire condition. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow according to the teachings of Lin to modify the device to include a setting device for inputting the signal of detection/the signal of low pressure and providing a sound and lighting effect corresponding to the signal of detection/the signal of low pressure.

Regarding claim 12, the claim is interpreted and rejected as claim 3 stated above.

Regarding claim 13, the claim is interpreted and rejected as claim 4 stated above.

Regarding claim 14, Solow and Lin disclose all of the claimed limitations. The claimed horizontal motion sensing function and the vertical motion sensing function being provided by two identical electronic sensors; wherein one electronic sensor positioned horizontally provides the vertical motion sensing function to detect a vertical vibration of the transportation vehicle, and another electronic sensor positioned vertically provides a horizontal motion sensing function to detect if the door of the transportation vehicle opens would have been obvious to one of ordinary skill in the art because it would have saved money by using identical motion sensors and simply

arranging them in alternating ways to provide the vibration detecting function of Solow (Solow: col. 3, lines 39-41).

Regarding claim 15, Solow and Lin disclose all of the claimed limitations. The claimed sensor module comprising an infrared sensor, the infrared sensor providing an infrared sensing function to detect movement of human body in the transportation vehicle would have been obvious to one of ordinary skill in the art because infrared sensors are well known to be used to detect human movement and would have been an obvious choice to enable the detector to detect intrusion inside the vehicle as disclosed by Solow (Solow: col. 3, lines 39-41).

Regarding claim 20, the claim is interpreted and rejected as claim 9 stated above.

4. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow in view of Lin and further in view of Kokubu et al. (Kokubu; US Patent 6,075,453).

Regarding claim 2, Solow and Lin disclose all of the claimed limitations except for the claimed lock unit being a digital electronic lock stored with a digital ID code therein and the key is a digital electronic key stored with a corresponding digital ID code therein and wherein the digital electronic key releases the coupling between the lock unit and the steering wheel if the digital ID code and the corresponding ID code match after

insertion of the digital electronic key into the lock unit. Kokubu discloses *Vehicular Door Lock Control Apparatus* that teaches an electronic lock and a key, both of which contain an ID code that is used to validate the key before the lock is opened or closed (col. 4, lines 66-67 and col. 5, lines 1-9). Modifying the lock of Solow and Lin to be an electronic lock and key with ID codes would increase the security of the system by only allowing the verified key to open the lock and remove the vehicle anti-theft device. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow and Lin according to the teachings of Kokubu to modify the lock to be a digital electronic lock stored with a digital ID code therein and the key is a digital electronic key stored with a corresponding digital ID code therein and wherein the digital electronic key releases the coupling between the lock unit and the steering wheel if the digital ID code and the corresponding ID code match after insertion of the digital electronic key into the lock unit.

Regarding claim 11, the claim is interpreted and rejected as claim 2 stated above.

5. Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow in view of Lin and further in view of Hiebl (US patent 6,496,100).

Regarding claim 5, Solow and Lin disclose all of the claimed limitations except for the claimed electronic module further comprising a first microprocessor and a first

Art Unit: 2632

memory and the function setting device comprises a second memory; wherein the first microprocessor is used to produce a communication code and to save the communication code in the first memory and the second memory, and to verify the communication code in the first memory and in the second memory upon inputting of the signal of setting so as to accept therefore. Hiebl discloses *Remote Control Key System Having Keyless Entry Functions And A Vehicle Immobilizing Function In Common Keyhead* that teaches a vehicle module with a microprocessor and memory and a remote device with a memory that both store ID codes that are used to validate the device before an operation is performed (col. 3, lines 18-37). Modifying the device of Solow and Lin to have a microprocessor and memory and to use ID codes to ensure the use of a valid remote device would increase the safety of the device by only allowing the correct remote to operate the vehicle anti-theft device. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow and Lin according to the teachings of Hiebl to comprise a first microprocessor and a first memory and the function setting device comprises a second memory; wherein the first microprocessor is used to produce a communication code and to save the communication code in the first memory and the second memory, and to verify the communication code in the first memory and in the second memory upon inputting of the signal of setting so as to accept therefore.

Regarding claim 19, the claim is interpreted and rejected as claim 5 stated above.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow in view of Lin in view of Hiebl and further in view of Sari et al. (Sari; US Patent 6,791,477).

Regarding claims 6 and 7, Solow, Lin and Hiebl disclose all of the claimed limitations except for the claimed function setting device further comprising a second microprocessor used to calculate the distance between the electronic module and the function setting device and to indicate the distance by the function setting device therefore; wherein the function setting device further comprises a display panel for indicating the distance and the signal of detection. Sari discloses *Method And Apparatus For Identifying Waypoints And Providing Keyless Remote Entry In A Handheld Locator Device* that teaches using a remote transmitter having a display that can display the distance and direction from the current position back to a preset position or the vehicle that the remote transmitter is associated with (col. 1, lines 39-42, col. 4, lines 58-67, col. 5, lines 1 and 46-48). See figure 1. Modifying the remote transmitter of Solow, Lin and Hiebl to show the distance and direction of the associated vehicle would allow the user to more quickly find their vehicle in a crowded parking lot in case they forgot where they parked it. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow, Lin and Hiebl according to the teachings of Sari to comprise a second microprocessor used to calculate the distance between the electronic module and the function setting device

Art Unit: 2632

and to indicate the distance by the function setting device therefore; wherein the function setting device further comprises a display panel for indicating the distance and the signal of detection.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Solow in view of Lin and further in view of Davis (US Patent 4,660,027).

Regarding claim 8, Solow and Lin disclose all of the claimed limitations except for the claimed power supply unit comprises a power detector and a power alarm, and wherein the power detector is used to detect the power level of the power supply unit and to enable the power alarm if a power supply from the power supply unit is below a predetermined value. Davis discloses *Reduced Power Consumption Low Battery Alert Device* that teaches a power supply detector that detects when battery power has been reduced to a predetermined level and produces a signal that drives an alarm in the form of a transducer to signal a user that the battery has reached a low power condition (abstract). Modifying the device of Solow and Lin to include a battery power monitor and alarm for indicating that the battery power has reached a low power condition would give the user more information and allow them to replace the power supply of the device so that it does not run out of power. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow and Lin according to the teachings of Davis to include a power detector and a power alarm, and wherein the power detector is used to detect the power level of the

Art Unit: 2632

power supply unit and to enable the power alarm if a power supply from the power supply unit is below a predetermined value.

8. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Solow in view of Lin and further in view of Uzzo (US Patent 4,609,905).

Regarding claim 16 and 17, Solow and Lin disclose all of the claimed limitations except for the claimed tire pressure sensor is coupled to at least one air nozzle and is coupled to inside of at least one tire. Uzzo discloses *Tire Condition Monitoring System* that teaches the placement of a tire pressure sensor on the inside of a tire and connected to a tire air valve (nozzle) as seen in figure 2b (col. 4, lines 5-62). Placing the tire pressure sensor inside of the tire and connected to the air nozzle would keep the sensor protected from harsh conditions inherent in roadway driving and allow it to monitor the air flow into and out of the tire through the air valve (nozzle). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow and Lin according to the teachings of Uzzo to have the tire pressure sensor is coupled to at least one air nozzle and is coupled to inside of at least one tire.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Solow in view of Lin and further in view of Handfield et al. (Handfield; US Patent 5,540,092).

Regarding claim 18, Solow and Lin disclose all of the claimed limitations except for the claimed at least one transmitter coupled to the at least one tire pressure sensor respectively for transmitting the signal of low pressure. Handfield discloses *System And Method For Monitoring A Pneumatic Tire* that teaches a tire pressure sensor that is connected to a transmitter for remotely transmitting the value of the tire pressure sensor to a central controller (abstract). Modifying the tire pressure sensor of Solow and Lin to include a transmitter to transmit the tire pressure value to a central controller would make the device easier to use and constantly provide indication of tire pressure instead of forcing the user to check the tire pressure manually. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device disclosed by Solow and Lin according to the teachings of Handfield to include at least one transmitter coupled to the at least one tire pressure sensor respectively for transmitting the signal of low pressure.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen, USP 5,398,017

Aaron, USP 5,745,030

Fuller, USP 5,055,823

Elmer, USP 5,128,649

Fuller, USP 5,258,741

Carlo et al. USP 5,365,215

Chang, USP 5,598,725

McCarthy, USP 5,619,872

Chen, USP 5,676,000

Kuo et al. USP 5,678,434

Chang, USP 5,755,124

Langner et al. USP 5,801,617

Markegard et al. USP 6,199,415

Hsieh, USP 6,433,678

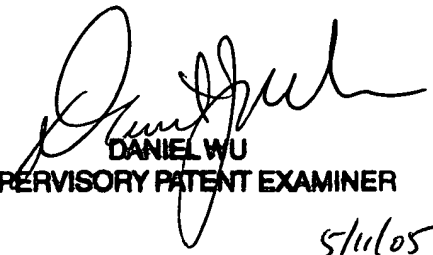
Winner, USP 6,734,788

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis R Hunnings whose telephone number is (571) 272-3118. The examiner can normally be reached on 8:00 am - 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRH


DANIEL WU
SUPERVISORY PATENT EXAMINER
5/11/05